

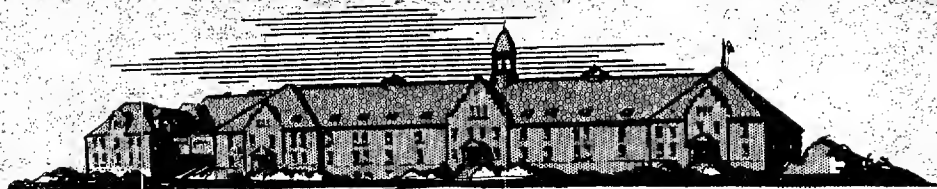
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THE EVOLUTION OF SEA POWER

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DEPARTMENT OF STRATEGY AND TACTICS

THE EVOLUTION OF SEA POWER

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THE EVOLUTION OF SEA POWER

Part I. The Classical Period of Sea Power 1492-1914.

It is not too much to say that during the period of the ascendancy of Europe over the other continents and their civilizations, which ultimately culminated in our present global unification of the world in a single politico-strategic balance of power, sea power constituted the key to the whole process. The main criticism that can be advanced against the discoverer and exponent of that key element, Admiral Mahan, is that, as the pioneer in the field, he did not yet grasp the interest and implications of his discovery to their full extent. It is only now, that as the result of a whole band of outstanding scholars who have followed in his footsteps, notably: Sir Julian Corbett, Admiral Sir Herbert Richmond, Richard Pares, J. A. Williamson, Arthur Bryant, and Robert Albion, that we are able to draw something like a fairly comprehensive picture of that vast process.

The Organization of the World.

The first point which it is necessary to stress in this survey, is the lack of organization which characterized the world in 1492. First and foremost as regards the globe as a whole, which at that time, and almost to the end of the period, that is to the age of Imperialism (roughly 1875-1914), consisted of a cluster of independent strategic areas with little or no connections between themselves. Europe, despite its common cultural traditions, was as yet split up into 3-4 different parts. The most important of them was the incipient balance of powers which towards the end of the Middle Ages had begun to constitute itself in Western Europe: Spain, France, Britain, the Empire and the group of larger and smaller Italian States. Northern Europe - Scandinavia - Poland constituted another such circle which was not integrated into the former until the middle of the 17th Century (that is, the Thirty Years War). Southeastern Europe (Austria, Hungary, Venice and the Ottoman Empire) was a third such grouping. Eastern Europe (Poland, the Baltic countries, Russia, the Turks, etc.) a fourth. Although these general groupings were not wholly unconnected, by the fact, as shown above, that members of one were at the same time members of the other, the ties between them were so loose that the full consolidation of Europe as we knew it in 1914, did not take place until Napoleon's campaigns from the Tagus to Moscow, and the opposition which he raised thereby had fused these various entities into a single strategic whole, which was then politically and diplomatically consolidated at the Congress of Vienna 1814-1815. In this sense, Europe has been

an entity from that time until the beginning of the First World War, (1815-1914) when the success of the Bolshevik revolution broke the bulk of Russia out of its system. What was true of Europe was even more true of the other areas and civilizations. The Western Hemisphere knew but three widely separate centers of a higher organization: the Toltec-Aztec civilization in Mexico, the Maya in Yucatan, that of the Inca's in Peru. In Africa, the coastal rim north of the Sahara formed part of the World of Islam, more specifically of the Ottoman Empire. South of the great desert belt we encounter only local political entities, sometimes of quite impressive dimensions, but necessarily without coherence amongst each other. For Asia, we find East of the Ottoman Empire, Iran, the Mogul dynasty under Baber just setting out for its conquest of India, a clutter of larger and smaller kingdoms throughout S.E. Asia; more continental in Burma, Thailand, Laos, Cambodia; organized upon the basis of local sea power in the Indonesian Archipelago. In China the tottering Ming Empire soon to be overthrown by the Manchus, with its outworks and glacis in Chochinchina, Tibet, Sinkiang, Inner and Outer Mongolia. Finally the island kingdom of Japan, not yet as tightly shut off against the outside world as soon after under Tokugawa Shogunate but nevertheless constituting, despite all cultural ties with Korea, China, even India, a distinct sphere of its own. In the extreme South Australia and New Zealand were thinly populated by aboriginal tribal groups.

Such in its broadest outline was the world which from 1492 onwards the white man started first to explore, then to exploit, and finally to organize through the unique medium which he had created for himself in sea power. In the use of this instrument it was of the utmost significance that not only were all these various concentrations of higher civilization and power, enumerated above, practically independent of each other, but that within all of them the measure of control over the forces of nature and hence the degree to which the resources of that area could be mobilized and concentrated, were still on a comparatively low level. Thus even in the technically and economically most highly advanced Western European area, the various individual member states were just emerging out of the general diffusion of spiritual and material forces characteristic of the Christian middle ages. The new foci of historical development, generally the dynasties, but in some cases (such as Venice, Switzerland and above all the Netherlands) republican forms of political organization, were so to speak, beginning to raise themselves out of the swamp of Middle-Age decentralization of authority and power by their own bootstraps; busily engaged in forging the most elementary instruments for the concentration and control of their territories, the securing of reliable sources of revenue,

the organization of armed forces of their own; curbing of the overweening power of the nobles and the church and enlisting against them the abundant talents offered to them by the rising Middle Classes. The practical effects of all this were that in the realm of power politics and its continuation, warfare, the material instruments at their disposal were for nearly two more centuries to lag fatally behind their political ambitions. Land forces were practically uniformly still upon a mercenary, if not a feudal, basis, with the result that the inadequacy of the revenues and hence the inability to keep these elements together for an indefinite period ("Point d'argent, point de Suisse") made any consistent, long range strategic planning almost impossible and reduced campaigns very nearly to the level of shrewd calculations as to which belligerent could exhaust his opponent's financial resources before his own gave out.

It was not until after the Thirty Years War where this kind of strategy played a decisive role (Wallenstein the outstanding exponent owed his fame and success as much to his skill as a financier and organizer than as a general) that with the institution of standing Armies and Navies in all major countries of Western Europe, this fatal weakness was overcome and that the foundations were laid, out of which in less than three centuries our modern systems of virtually complete mobilization of all the manpower and material resources eventually developed.

In this process of the gradual development of military power the development of navies would at first sight have seemed to have greater obstacles to overcome than land armies, simply because the basic material outlay was so much greater in the case of sea rather than of land power. And yet the very reverse was the case. While consolidation of standing navies did not occur much earlier than the beginning of standing armies, the former nevertheless, from the outset held superiority in organization over the latter. This was partly the result of the fact, that the major naval powers had from the outset their merchant fleets which with but relatively small alterations could be readily transformed for and put into, warlike service. (Ships built specifically for military purposes, the men-of-war, came only gradually to be separated from the merchant vessels the process did not really reach its conclusion until about the beginning of the War of Spanish Succession). A second, and perhaps even more important factor, was the fact that the possibilities of this new instrument of Sea Power were grasped with an astounding prophetic vision by a small number of quite overtowering naval statesmen: the Marquis of St. Cruz in Spain, Sir John Hawkins and Samuel Pepys in Britain, Colbert in France, the great Dutch Admirals like De Ruyter in the Netherlands, even the Great Elector in Brandenburg and Peter the Great in Russia.

Yet a third factor which contributed to this remarkable precedence of the concentration of sea over land power in Europe in the decisive formative centuries of our modern world, lay in the nature of their functions. The decisive factor in the struggle for supremacy between the powers of Western Europe was, as we have said above, money. Money to pay for the newly created administrations, money for the building up of armies and fleets, money to wage war with these or conduct diplomatic campaigns dependent largely on bribery, last but not least, money to gratify the whims of the princes and their mistresses. This money under the then existing primitive methods of taxation could not possibly be extorted in sufficient amounts out of the gradually developing productivity of these various countries; Spain, France, Britain, the Netherlands, Austria and the Empire. The only places in the world where money could be secured in sufficient quantities was in lands beyond the seas; either through the outright plunder of the amassed treasures of the conquered aboriginal civilizations (Cortez in Mexico, Pizzaro in Peru) or else through the establishment of a monopoly over some highly priced commodity (spices, etc.) as in the case of the Portugese and later Dutch Empires in the Indian Ocean or merely by trying to concentrate the trade with the great oriental civilizations in their hands, as in the case of the English and French in the East Indies. Since thus the indispensable "bullion" for the maintenance of the states and their assertion in the struggle for hegemony in Europe (Spain at the time of her predominance went bankrupt no less than four times) was dependent upon sea power, there was thus an understandable preference for "naval" and "colonial" wars which brought in money over "continental" struggles, which merely served to drain it away again in the form of expensive land campaigns or of the subsidies for them. In Spain, in France, in the Netherlands, in Britain, the struggle between these two schools of "continental" versus "maritime" warfare dominated strategy from the middle of the 16th to that of the 19th century; but, in the long run always ending with the predominance of the latter over the former; not only because there were far greater private interests involved in the naval in comparison to the land conflicts, but because the leading statesmen realized more and more clearly that the two were not really opposed, but rather the mutually interdependent sides of a single grand strategy embracing both Europe and overseas world, and in which the latter, as the source of the "sinews of war", constituted the decisive factor. In Britain, William Pitt having risen as the most forcible exponent of the "colonial" school, became Britain's greatest war leader by the manner in which he fused the two aspects into a single scheme, conquering Canada (and India) by forcing France to exhaust her resources in an indecisive struggle on the Continent. In France, Choiseul rediscovering under the vivid impact of that lesson the significance of the oversea sources of wealth, rebuilt French sea

power in order to take his revenge when the rising of the American colonies against Britain offered him his opportunity. "Upon the Navy," he wrote, "depend the colonies, upon the colonies commerce, upon commerce the capacity of a state to maintain numerous Armies, to increase its population and to make possible the most glorious and most useful enterprises." And again: "I do not know whether one really understands in Spain, that in the present state of Europe, it is the colonies, trade, and in consequence, sea power, which must determine the balance of power upon the continent. The house of Austria, Russia, the King of Prussia are only powers of the second rank, as are all those which cannot go to war, unless they are being subsidized by the trading powers."

Command of the Sea.

The reasons why in this struggle Britain prevailed and France lost are too manyfold to be reduced to a single ultimate cause. But, at least one of the most important factors was that in France even men like Colbert and Choiseul, utterly convinced of the decisive importance of sea power, failed to grasp its innermost secret, which their British rivals learnt to understand and apply, even though only by much trial and error and at grievous cost.

In contrast to the land the fundamental characteristics of the sea as a field of human, and in particular of military action, are first: its size, second its "all-embracing" and "interpenetrating" distribution surrounding and at the same time reaching deep into the continental masses, thirdly its "indivisibility." In other words the fact that no part of it can be fenced off, fortified and defended by itself in the manner in which on land a territory can be held by one beligerent even against a superior opponent controlling the adjoining area or areas.

In the peculiar conditions which existed during the centuries when Sea Power reached its classical development, with as yet wholly imperfect means of observing and communicating rapidly the observations of enemy naval forces, thus the impossibility of effectively controlling even so "narrow" a sea as the English Channel, any enemy fleet, once it got into the open, caused acute incertitude as to its destination it might conceivably inflict unpredictable damage to any of the manyfold interests of its opponent open to its attacks: his own territory or that of his allies, his seaborne trade, his colonial possessions overseas. The various successful invasions of Ireland by the Spaniards in the 16th Century, of whom we hear so little in contrast with the failure of the Grand Armada, the numerous successful evasions of the British by the Dutch in the Anglo-Dutch War, the transfer of the Old Pretender to Scotland

in 1708 and that of his son in 1745, the French success in capturing Minorca in 1756, the opportune appearance of De Grasse before Yorktown in 1781 were amongst the most outstanding illustrations of the damage an "unlocated enemy force at sea" could cause in those times. Hence the agonizing incertitude whenever an enemy fleet got to sea, or was obviously preparing to do so, as exemplified by Hawke's watch over Conflans at Brest, until finally he was able to intercept the latter's sortie and settle scores with him once and for all at Quiberon Bay. Upon this distracting effect of this incertitude, Napoleon built the whole of his campaign to gain temporary "Command of the Channel" in 1804. By no means without success. When Villeneuve's squadron got to sea at last from Toulon, the objectives believed to be threatened by it were as far apart as Alexandria, Ireland, and the West Indies.

What defeated him on that occasion was the fact that beginning with the hard experiences of the First Anglo-Dutch War, the British naval statesmen gradually came to realize that there was only one way of preventing your opponent from thus distracting or damaging you on the sea: that is by preventing him altogether, from getting out onto it, either by destroying him in battle, or, if he preferred to keep his fleet or fleets as a threat "in being" in his ports, by controlling each of his major forces by one of their own, that is by blockade or by a system of blockades. This form of naval strategy was finally, after many reverses suffered by failing to apply it, consolidated in the course of the Seven Years War under Anson and Hawke and reached its apogee under Barham and Nelson in the Campaign of Trafalgar.

Thus in its primary motive this strategy of systematic control over the enemy's forces was defensive. Or rather, in the "Command of the Sea" the two forms of strategy, offensive and defensive coincided as Mahan showed in a masterly analysis "Blockade in relation to Naval Strategy" (Journal of the Royal United Service Institution (1895)). On land the two forms could be separated, that is the defender could confine himself, merely to the defense of his territory or of such a part of it as would enable him to carry on the struggle at all. In fact, the difference between these two forms ("offensive the positive form with the lesser strength, defensive the negative form with the greater strength in its alternative application, and in its interplay between the two belligerents, constitutes the fundamental essence of strategy (Clausewitz). At sea, as Mahan formulated it: "The fundamental principle of all naval warfare" was "That defense is assured only by offense" culminating in the "Command" either through battle or blockade. Because as the old saying went "the sea is all one" it could not be divided like the land between the belligerents; but each of them could only achieve real security for his manifold and widespread interests, if he succeeded in eliminating his opponent from it altogether.

The "Command of the Sea" in the classical sense was, however, more than merely this offensive-defensive control over the enemy's main or battle-forces. It was the cornerstone of a much vaster strategic edifice. For behind the screen thus established by the battle fleet or fleets against the enemy's intervention with his major forces moved the vast and intricate system known as "escort of convoy." However, complete the destruction of the enemy's main forces or alternatively their blockade, the strength of no belligerent was ever sufficient to enable him to control in addition all the minor ports and bases from which enemy raiders could emerge. Nor was blockade itself ever so complete as to make all evasion virtually out of question. Against these minor enemy forces which could not attempt an invasion or a coup de main, but which might nevertheless wreck havoc among the sea-borne trade the latter had to be given in addition to the indirect protection afforded by the "first line" of the battle fleets a secondary line of protection, either through men-of-war patrolling the main trade routes - hence the origin of the term "cruiser" - or direct escort. But the fundamental advantage achieved through the "Command" was that these escorts needed no longer to be made strong enough to meet all the enemy's forces, but only those minor forces which no "Command", however effective, could control. Thus "Command of the Sea" through this division of functions between the main battle forces controlling the enemy's main forces and the escort forces protecting sea borne trade against raiders constituted an economy of force on the part of the stronger belligerent, not merely with respect to the defense of his sea borne trade, but also with respect to the defense of his over-sea territories (colonies) against attacks from his opponent's home base in Europe. By establishing their "Command" over their opponents in the "narrow seas" of the Atlantic coastline of Europe, the North Sea, the English Channel, the Bay of Biscay, the Western Mediterranean, first the Sea Powers, Britain and the Dutch, later Britain alone were able to protect by one and the same act, their home countries from sea-borne invasion, their sea-borne trade against crippling losses, as well as all their colonies spread along the coasts of the Seven Seas.

The Ways and Means of Sea Power

Naval strategy, by striving for, and establishing "Command of the Sea" thus aimed at debarring its opponent from the use and to reserve it for its own side. In this manner it created the basis for the exercise of "Sea Power", but contrary to the loose usage with which these two terms are sometimes identified, was not itself "Sea Power." Similarly, the sum total of all those factors, which have to come together in order to create "Naval Power" or "Strength at Sea" and make possible its exploitation does not yet constitute "Sea Power." Whether one

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envisages these elements as broadly as Mahan himself did in his first book: geographical position, physical conformation, extent of territory, population, national character and governmental institutions ("Influence of Sea Power on History," Pt. I.) or, more narrowly as: men-of-war, merchant marine, a seafaring population, ports, bases, airstrips, etc., they are the basis of Sea Power, not Sea Power itself; as little as one would think of defining Electric Power, by describing it as the sum total, or combination of: generators, transmission lines, transformers, etc.

What then is Sea Power?

As Mahan clearly revealed in his later and the most profound of all his studies "A problem of Asia", "Sea Power" operates on the basis of the achievements of "Naval Strategy," upon the higher and broader plane of Grand Strategy. It can best be defined, as: the exploitation of the possibilities opened up by the "Command of the Sea" by the Over-All Strategy in the broadest sense. It is thus indeed a sum, or better, a bundle; but not of components or elements, but of ways and means of deploying its peculiar power, and bringing it to bear upon the opponent. It is thus not merely a sum of given advantages to be applied unthinkingly according to some inherited formula or recipe. It is a bundle of dynamic potentialities, which require to be perceived and developed ever afresh out of the continuously changing conditions and instruments, so that they may become realities. The ultimate source lies in the creative ingenuity of the human mind. That is why from its first, and greatest exponent onwards, Thucydides, Sea Power has again and again appeared as the symbol, and expression, of the untrammelled, and unpredictable, freedom of the spirit.

Again, "Sea Power" differs from and transcends "Command of the Sea" in its scope. "Naval Strategy" with its ultimate objective of the "Command" is necessarily confined to its own element. "Sea Power", however, projecting its influence by manifold ways and means deeply into the opposite sphere, has always affected, and been concerned with, the "whole of the war" on sea and land alike. The manifold functions which, as we have tried to show, it was able to discharge defensively during the classical period concurrently by the one act of establishing "command", constituted but one aspect of its functions. Its offensive significance was no less diverse or significant. From the safe basis of its immunity to invasion Sea Power in the hands of Britain was able first and foremost, to cut the vital flow of economic strength from its overseas sources to Europe; to deny it to her opponents and to direct it into her own coffers. Instead of financial burdens her wars became steps in her economic expansion amply paying their cost by the increase in national wealth which they brought about and enabling her to maintain her allies on the continent with her subsidies.

Beyond the cutting of that umbilical cord of treasure and trade across the oceans, the immunity from enemy counteraction and interference conferred by the "Command" enabled Sea Power to bring its military and naval forces to bear with maximum effect directly upon the course of the continental struggles. The primitive state of the general economy and hence of military organization forced continental warfare into channels where it laid itself open to the influence of naval forces, particularly in the three key areas, the Low Countries, Catalonia and the Riveria. Naval bombardments, the cutting of the enemy's coastal supply lines, the conveying of friendly military expeditions, "distractive raids" against the enemy's coastlines, finally major "limited" campaigns imposed upon him in distant areas where the extent of his supply lines made for a maximum of attrition, as in Napoleon's "Spanish Ulcer", formed an ascending scale of possibilities by which "Sea Power" could exercise an influence upon the struggles between the rivalling continental powers, out of all proportion to the forces engaged. So great, in fact, was the influence which these two main groups of material forms of intervention, the economic and the military, conferred upon Sea Power, that frequently their actual application was not even required and the mere threat proved enough. This ability to achieve its effects by its mere presence alone, nipping the defection of allies or incipient conflicts "in the bud", before they ever had a chance to become realities, constituted the third and perhaps the most characteristic and most important of all the "offensive" traits of Sea Power. It made Sea Power during those centuries the political instrument par excellence and enabled Britain, from the safe basis of her islands and her dominant position in the Mediterranean to hold the balance between the continental powers and wield an influence out of all proportion to her size, resources and manpower.

Small wonder, that these opponents, while acutely sensitive to its effects should have failed to penetrate to the secret of its cause. The rise of British Sea Power to the position of solitary grandeur which it occupied at the time of its epic struggle with the French Revolution and with Napoleon, was accompanied by a chorus of Dutch, German, Danish, and above all, French pamphleteers and diplomats, denouncing her interference in their affairs and trying to expose its sources. But, they all fell into the same error, of concentrating their attention upon the ultimate cause, the development of the American colonies and the influence which the flow of their resources was exercising to an increasing degree upon the political struggle in Europe, and not upon the instrument, "Command of the Sea" by which Britain, interposing herself midway between the two had known to take the key into her own hands. Thus, all the brilliant French Admirals of the 18th Century, with the solitary exception of the great Suffren were unable to

achieve in the long run more than ephemeral successes by their most ingenious maneuvers. Their victorious British rivals on their part, were wholly disinclined to commit their hard-won secrets to paper; preferring to pass them on in a kind of "apostolic succession" from the commander to his Flag Captain, who in the next round became in his turn the torchbearer of that tradition. When in the 19th Century the British supremacy at sea had become so completely established that it was no longer seriously challenged, this purely oral tradition broke off, and the secret of Sea Power had to be rediscovered at the end of the century, and of the classical era, by the converging efforts of Laughton, Colomb and, above all, Alfred Thayer Mahan.

Part II. Sea Power in the Industrial (Global) Revolution
1914-1945

Mahan's rediscovery of the key influence which "Sea Power" had exercised in its classical period upon the course of European and ultimately of World History, was actually its swansong - at least in so far as the quite unique conditions were concerned, under which it had developed and the forms and limitations which the technical instruments of its age had imposed upon it. Between the period of its apogee under Barham and Nelson and the end of his own life-work, two of the greatest revolutions had radically changed the scene, and through their material and intellectual influences transformed the nature and instruments of Sea Power in manifold and significant respects. It would thus seem appropriate to consider these modifications of our world, and of the character of Sea Power in it, under those four headings rather than the usual chronological organization. The more so, since after the detailed exposition of the foundations, it will now be possible to concentrate the discussion much more sharply, in order thus to leave more room for the following, discussion of the further, and even more significant, changes and modifications which confront us today.

The Industrial Revolution and Sea Power

The Industrial Revolution has been underway for almost two centuries. It has already transformed our material existence to a higher degree than any earlier event in the evolution of mankind, since the development of speech and thought. The more remote and readily apparent effects upon the spiritual and intellectual bases of our civilization have hardly yet begun to be realized. For it is so much the overwhelming event of our whole age, that it has, so to speak, stolen a march upon us, ere we ever realized it. Its influences encompass us so intensively from all sides, that it is no longer possible for us to grasp directly, what the World looked, and felt, like, before it came over us, and what precisely have been the changes which it has wrought. It is only by going back into the eras preceding it, and systematically analyzing them, as in this study we have tried to do with the "classical" period of Sea Power, that we can hope to gain outside of this tremendous event, dominating our entire consciousness, the Archimedean point-of-view, from which to view it from the "outside" and "as a whole," and thus gradually to grasp a clear view of its most important aspects.

The most important, though not the most immediately perceptible of these aspects was the consolidation through the Industrial Revolution of the process which we have tried to sketch as the organization of the World. Within a few decades of its inception the long drawn process by which the Powers of Europe

had step by step built up their political, administrative, economic and military power had reached the point, where their ability to maintain this "superstructure" from their own productive resources was assured, and their dependence upon the flow of resources from the overseas world, which had been so characteristic a trait of their development from the 16th to the end of the 18th century ceased. None of them, thereafter, was forced into open repudiation of its debts. The subsidies, so characteristic of seventeenth and eighteenth century warfare disappeared, henceforth, for the next 130 years even the smaller European powers were sufficiently developed to finance their armed forces normally out of their internal revenue. This process of the consolidation of the European powers individually, and of Europe as a whole collectively out of the 3-4 different "groupings" at the beginning of the modern age, took place roughly during the period of struggles unleashed by the French Revolution and found its diplomatic and symbolic consolidation in the Congress of Vienna. About the same time the American colonies, with few exceptions, amongst which Canada was the most outstanding, broke away from their European mother countries and under the aegis-shield of the Monroe Doctrine - and that of British Sea Power - constituted themselves as a truly New World, apart from the quarrels of the Old. Thus the "tripartite" organization of the World into the rivalling European powers on the one side, their overseas sources of treasure, trade and revenue, on the other, which had given British Sea Power its unique key position between the two, broke down simultaneously from both sides.

In the place of this centuries-long flow of "bullion" and luxury trades like furs, spices, sugar, rum, the growing industrialization created a new flow of bulk imports, both of raw materials and of foodstuffs. But, the power which the control over this new seaborne flow conferred was never quite as great, as that over the financial bloodstream had been in the classical age, decreasing in the nineteenth century, rising again in the First and declining once more in the Second World War, when the lessons of the first had been utilized by all the belligerents to make themselves as blockade proof as possible. Only against the quite peculiar, and in fact unique dependency of Japan upon the raw materials of her newly conquered South Sea Empire the blunted instrument of economic blockade regained its full decisive effect.

The two technical instruments which together with the general administrative and economic consolidation had enabled the Land Powers to redress their balance with Sea Power, somewhat in their favor, the railway and later the plane, exercised a similar effect upon the second, military, group of possibilities of Sea Power. To the degree that the land became really organized through them, so that its military power could

promptly be transported by rail, motor, or air to the point under threat of attack, the distractive effect of Sea Power no longer was able to retain its full, former efficiency. Here again it was not so much a general process of decline as rather, in the place of the fairly steady effect during the slowly evolving earlier centuries, a fluctuation. In the course of the Second World War the possibilities of amphibious landings varied within relatively short time limits. Large amphibious landings became every time afresh a new proposition, the prospects of which contained an element of incertitude, which no amount of meticulous preparation could eliminate.

The Development of Transoceanic Warfare and of Global Strategy.

A second aspect of the Industrial Revolution was the extraordinary impulse which it gave to the spread of Western rule and civilization over the world, leading first to the rise of new concentrations both of land and of sea power and finally to their fusion in the course of the Second World War into a single, global strategic balance-of-power.

In the "classical" period all the opponents, with which the British Admirals seriously had to reckon: Spanish, Dutch and French, had their main centers of naval power in their home territories where they could be blockaded and controlled either from the British home ports or advanced bases like Gibraltar and Port Mahon. On those occasions when powerful battlefleets succeeded in evading this British system of blockade in Europe, they were followed and run to earth like Villeneuve by Nelson. Their permanent forces in oversea waters on the other hand, were only of local significance.

Thus, by controlling them at short range in their home waters British strategy could through her more effective "command of the Narrow Seas" practically eliminate them from the use of all the Seven Seas and reserve for herself their potential use, or in other words, by a mere European superiority to establish a world-wide "Command of the Sea."

The growing organization of the World in the course of the Nineteenth Century; the expansion of the British Empire into a world-encircling network of territories and bases; the extension over vast tracts of both Asia and Africa and hence in addition to sea-borne its exposure to the threat of attacks coming overland: by Russians and Germans in the Near and Middle East, by the French in Africa; finally the rise of strong naval powers outside of Europe, in the United States and in Japan transformed the remarkably simplified picture by which at the end of the "classical" period Sea Power had virtually been concentrated in the hands of Britain, into a far more complex situation picture.

It was, however, not the British, but the two new rising Sea Powers in overseas, who found themselves first confronted with the fact that with the expansion of the strategic scene from the coastal waters of Western Europe to the World the established pattern of the "Command" had experienced a modification. In the war with Spain Admiral Samson, as Mahan explained very clearly, could not possibly hope to control his opponent, Cervera in the latter's home ports, by blockading him on the other side of the Atlantic. Thus, he had to leave him the freedom to come out and use "the Sea" and to restrict himself to establish his own superiority merely in the decisive area, the Caribbean, waiting there for Cervera to come and meet him. Similarly, six years later Togo was able to exercise "effective" control by blockade along the classical lines only over the Russian Far Eastern Fleet in nearby Port Arthur, but not over the Baltic Fleet on the other side of the globe, and in his turn was forced to wait for Rozdjestvenski to come to him, with all the incertitude involved in such a course.

In other words, naval strategy which under the exceptional conditions of the classical era had been able from Britain's unique position vis a vis her rivals in Western Europe to seek to debar her opponents from "the Sea" altogether, had to restrict itself under the new conditions of transoceanic warfare to the endeavor of seeking to assure to its own side "Command" merely of those areas which were felt decisive while leaving the enemy free to get out to sea and even establish his "Command" over the sea areas on his side.

British naval strategy was spared the need to face this new problem in the First World War because the skill of British, and the inaptitude of German policy, had brought in all the other sea powers on her side. Thus she could fight that conflict still essentially on the same lines as two and a half centuries earlier her conflict with the Dutch, controlling the main German battle-fleet by a somewhat looser system of blockade from Scapa Flow, still close enough to prevent a break out into the open Atlantic. Yet, the problems which on this occasion could be prevented from arising, were not thereby dispersed. After the period of the "suspension of strategy" in the twenties, they reappeared again in the thirties in the form of the danger of a simultaneous engagement of Britain with no less than three potential naval opponents in widely separated parts of the world: Germany, Italy and Japan. A nightmare in the years of increasing tension it became almost a reality in 1940 and wholly after Pearl Harbor. By that time, however, its worst menace had been conjured by the Alliance of the two Anglo-Saxon Sea Powers finding its strategic expression in the plans for a wholly novel, world-encircling strategy first formulated in February - March 1941 in Washington.

Within that Global Strategy "Command of the Sea" assumed at first the more restricted forms of transoceanic warfare both in the Pacific and in the Indian Ocean, until with the successful pushing forward of the offensive against Japan something very much like the closer, classical form was clamped down upon the Japanese main islands in 1945. Meanwhile on the broadest over-all scale the fusion of the Oceans and continents permanently into a single strategic chess-board, revealed for the first time the full significance of the all-surrounding and interpenetrating unity of the sea in relation to the isolated and divided continents. Control of that universal medium of mass movement became in the hands of the Anglo-Saxon Sea Power combination the decisive card in their struggle. Behind the shield of their "sea power" they were able to hold out, to mobilize their forces, to plan and launch their counter-attacks at their own chosen times; to exploit the traditional advantages of amphibious operations on the largest scale; finally to keep their two groups of opponents apart, while concentrating their own efforts successively first against the one and then against the other.

The Instruments of Sea Power in the Industrial (Global) Period.

These profound modifications in the organization of the World as a whole, the balance between Land and Sea Power, and the forms of Naval strategy, were in their turn decisively affected, and made possible, by the simultaneous amazing development of the instruments for their execution. Like the whole overwhelming flood of technological developments let loose by the Industrial Revolution, they are almost impossible to keep track of, enumerate and analyze in detail. Nor is it necessary to do so in this over-all study of the evolution of Sea Power, except in their very broadest outlines.

Thus it is obvious that in the field of naval strategy the development first to trans-oceanic and then to world-encircling strategic dimensions was affected not so much by the advances in the means of propulsion, as by the enormously increased powers of observation through the development of the plane, and further of radar, as well as of the means of instantaneous and world-wide communication. Without these two groups of developments it is inconceivable how the great transoceanic campaigns of the last conflict could have been directed.

Compared with the magnitude of these changes the fact that the traditional bearer of sea-power, the battleship has been replaced in most, if not all, of its functions, by the new instrument of the carrier, constitutes a relatively subordinate, if still most impressive fact.

Again the development of the submarine has been a factor which in two World Wars has twice, by the secrecy and sheer mass

of its actions, almost overwhelmed Sea Power and brought it to the verge of collapse. Yet, the fundamental pattern established in the "classical" period of the "Command of the Sea" of the division of functions, between the indirect protection afforded by the control of the enemy's main forces and the direct protection by escort of convoy, was again the crucial issue in the battle of the Atlantic in 1940-41. Yet, if the submarine develops further, it is well conceivable that a complete revolution of naval strategy might come about by it.

The same holds true of by far the greatest of all these technological developments, touched upon above in several most important of its numerous facets, the conquest of the air. Here again, the very existence of Sea Power has threatened to be overwhelmed, and yet, has been reestablished by borrowing the enemy's own weapons and developing in naval-air the instrument permitting Sea Power not only to go on living, but even to expand its direct power to strike incomparably deeper inland into its opponent's sphere, than before. Yet, of the plane and the guided missile it is even more true than of the submarine, that any hard and fast predictions as to what they may lead, or not lead to, in the future would be rash indeed.

The Influence of the Industrial Revolution upon Military Thought.

There remains to note briefly a last major influence of the Industrial Revolution, upon the organization of power by no means least important, but least recognized. Mahan's (and his contemporary Corbett's) life-work in developing the nature and implications of Sea Power was, not by accident, the last great synthesis in the field of military thought. The sovereign intellectual control with which the great classical masters of land and sea power embraced the whole of their field from the broadest general considerations to the most minute detail, has become more and more difficult to retain, to the degree that the Industrial Revolution with its overwhelming continuously increasing and accelerated onrush of masses of facts and events has since the First World War decisively broken into the military sphere. Since that time the prevailing tendency has been more and more to give way to that seemingly inescapable development, to concentrate upon such issues as can still be handled. The effort to retain, or recover, a truly general survey has become harder and harder, and with it there has come a series of noticeable changes over the whole field of military thought. In the concentration upon the immediate, the continuity between Past, Present and Future is being lost sight of. We are even solemnly invited to throw our intellectual inventory out of the window and start almost from scratch. Simultaneously, attention tends to concentrate upon isolated weapons or technological developments and to raise them to an "absolute" status by tearing them out of the great context of the military, and ultimately

the political, evolution of mankind. This process of "intellectual atomisation" is the common problem which the Industrial Revolution has posed to our control over the world, we have created, in every branch of it. But, it is nowhere more serious than in the military sphere. And here, it is again particularly important in the domain of Sea Power, precisely because Sea Power from its origin has always tended to be conceived with not this nor that part of peace or of war, but with the whole and can assume its full significance only in this grasp of the whole.

Part III. Sea Power in our present Crisis.

Perhaps the most remarkable aspect of the ever accelerated rapidity with which the affairs of mankind have been set into motion by the Industrial Revolution is the fact, that today, barely five years after the end of the Second World War, the picture of the organization of our world, of the possibilities and prospects of the use of power in it in general, and of sea power in particular, have again been so profoundly modified, that a new and radical assessment should have become both necessary and possible.

The Unprecedented Intensification of the Political Struggle in our Present Crisis.

This rapid development of our political and military situation is generally, in fact universally, recognized. But, under the fatal influence of the one-sidedly technological thinking which constitutes at the same time both the most significant and the least recognized, of the remote effects of the Industrial Revolution it is attributed by a sort of intellectual "short-circuit" one-sidedly to the development of the wholly unprecedented means of destruction and their countermeasures: strategic mass bombardment and the Atomic Bomb, modern high-speed submarines and the defense against them, Bacteriological Warfare, etc.

Against this widely, if not universally, prevalent tendency it cannot be emphasized too strongly, that all these "technical" developments, however impressive, and frightening, belong ultimately to the forever subordinate sphere of the "means" and, therefore, are necessarily overshadowed by the simultaneous, incomparably more profound, and more far reaching transformations in the superior sphere of the "ends". That is the sphere of the political order of our world and that of its global strategic organization, and of the quite novel problems with which at this moment they confront us concretely.

Of all the manifold and momentous effects of the Industrial Revolution none to date has proved remotely comparable in significance to the radical cleavage which it has created within mankind, as to the political forms of the organization of the new mass-world. The decision whether it is to proceed upon the organic lines of democratic freedom or the mechanical lines of totalitarian centralization and despotism endows our present crisis with a political significance and weight without precedent.

That is only too clearly understood by our opponents in the Kremlin. They are not the men, not to draw the fullest consequences from this insight. Their tendency to "fight" this issue

in the forms of a "political" rather than a straight military struggle; as a "war of nerves", a "cold war", ultimately, as in their "peace offensive", as a "World civil war", does not spring merely from the fact that the particular character of their military power, or the fear of our preponderance in "strategic air power" and "atomic weapons" absolutely constrains them to that course. It springs from a very profound, and just, if thoroughly perverted, insight into the essentially "political" character of our struggle.

The Global Strategy of our Present Crisis.

From the point of view of an attempt to follow the evolution of Sea Power as it has been made in this paper, one of the most significant aspects of this supreme crisis is the fact, that the two opposing political principles of freedom and despotism, have once again, as so oft in the course of history identified themselves with the opposition of the military power of the Sea to that of the Land. The communist bloc today, after the inclusion of China, represents the mightiest as well as the most compact concentration of land power ever realized. Conversely, whatever the differences about strategies and their details in our camp, there has been a virtually unanimous agreement - so complete that nobody so far seems to have noticed it expressly - that the essence of the power which we can oppose to the menace of the spread of tyranny over the entire surface of the earth, is the same factor, with which 2500 years ago the Greeks wrote the first glorious page in the long and bitter struggle for the cause of freedom: the Power of the Sea.

That power is today facing a situation difficult as never before. In all its previous encounters it had, as we have tried to retrace in this paper, four main aspects: the immunity against enemy attack which it conferred and the three groups of "offensive" possibilities: through economic pressure, judicious application of its more limited military means to the neuralgic spots in its more massive opponents' body, finally, the more political effect of the potential intervention. As far as the first, the immunity against enemy attack, is concerned, it still holds good even today for the citadel of the Free World in the Western Hemisphere. The Atlantic and the Pacific are still the most formidable barriers not only to invasion, but to air attack, on this globe. But such other vital advanced bases as the British Isles even if they should once again be able to escape or defy an invasion are today in imminent danger of being crippled by saturation bombardments of their main centers, particularly, their three most important ports: London, Liverpool and Glasgow.

This grave problem raises the other vital defensive issue which has been occupying us so much in this analysis: the

capacity of Sea Power to project its forces across the element which it commands to any point upon which it desires either to support or to attack. Already in our recent struggle Winston Churchill, certainly not one inclined to disparage or underrate Sea Power found it necessary at the height of the crisis to place the issue squarely and bluntly before the chosen representatives of his country. "The whole power of the United States," he pointed out in the House of Commons on 31 October, 1942, "depends upon the power to move ships across the sea. Their mighty power is restricted. It is restricted by those very oceans which have protected them. The oceans which were their shield, have now become a bar, a prison-house, through which they are struggling to bring armies, fleets and air forces to bear upon the great common problems we have to face." At that time the menace to the mobility, and "ubiquity", which had always been the special characteristic and privilege of Sea Power could eventually be overcome; but only by the narrowest of margins. How much greater that menace has become in the meantime is readily discernable from the two facts: Soviet Russia today possesses a far larger fleet of submarines than Hitler ever had at his disposal, infinitely more deadly individually and benefiting from the, voluntary or enforced, advice of some of the best brains behind the former effort. Moreover in building up in addition a powerful group of surface raiders, the leaders may be preparing themselves for just that sort of combination of forms of attack the real possibilities of which not only Hitler himself but even his naval advisers never adequately grasped. In these circumstances only so much can definitely be asserted, that the task of Sea Power constitutes today, as in the past, the indispensable basis of the whole of our Grand Strategy. If Sea Power achieved nothing else than to solve it, it would have more than amply justified its existence; conversely, if it should not be able to do so, every other effort would almost certainly lose its significance.

Turning from the defensive to the offensive possibilities of Sea Power, the first group, that of inflicting crippling damage upon its opponent by depriving him of the flow of his sea-borne commerce, must in the present situation appear the least promising. An area of the size and the variety of products stretching from the Elbe to the Oxus and to Kamchatka, can no longer be "reduced" by blockade.

Militarily, the situation offers a much more hopeful prospect. True, the possibility, which proved such a decisive advantage to Sea Power in the recent conflict, of separating its two groups of opponents by the support of a whole block of allies between them, the Soviet Union, China and the great British dominated block in the Near and Middle East, is today gone. The massive compactness of the Soviet Block as a whole is a given reality to reckon with at least for the present. Thus sea power

no longer can hope to balance one part of land power against the other, far less to conduct with its own limited forces and those of the Allies which it still can count upon on the Land-Mass of the Old World, a land offensive of decisive dimensions, that is capable both of smashing the enemy's armed forces as well as subsequently occupying his territory.

On the other hand, the strategy of "containment" which it has begun to develop in the footsteps of that adopted by the British war leaders in a similar situation in 1940, has solid bases, provided that its nature and purpose are clearly grasped, the means available sharply concentrated upon the decisive areas and the whole concept applied with the necessary flexibility. For such a strategy would still be able to base itself upon the exploitation of that broad belt of natural obstacles - mountain ranges, deserts, above all water barriers which stretching mid-way through the land mass of the Old World, still hems in the expansion of the Communist Land Power Block as in the days when Mahan first analyzed it in his "Problem of Asia."

There remains thus, to round off this survey, at least some notice of the third of the three groups of "offensive" possibilities of Sea Power, that its utilization as essentially an instrument of Political even before Military Warfare. We have seen in the first part how this particular aspect of it, despite the enormous role which it played in the "classical" period, and despite the importance which it implicitly held on almost every page of Mahan's, Corbett's, Richmond's writings, has never received anything like the full explicit recognition which it deserves and deserves. Certainly, its invaluable services in this respect during the last years of rising tension have never received a tithe of the attention so lavishly showered upon more ostentatious and spectacular forms of power. Perhaps one of the deeper reasons for this lies in the fact, with which we began this final survey: namely, that in contrast to the Communist leaders, opinion in this country, has been so far too much inclined to think of "power" in terms of military technology and too little in those of a primarily "political" struggle, to be played in the words of General Marshall not only "with a voice that will kindle the imagination and rouse the spirit" but also with "ice-cold, calm deliberation." Perhaps, that with the rapidly increasing recognition of this general character of our struggle, this so vital aspect of the Power of the Sea may both achieve, and, above all, receive a greater measure of appreciation.